VI. Let ABC be $\triangle$ right-angled at C. Produce AC to some point as D. Draw DF perpendicular to AB, produced, and meeting CB, produced.

Employing notation similar to that used in V., and proceeding somewhat in the same manner, we find that this method also yields a large number of proofs, in fact the same number that we found in V.

[To be Continued.]

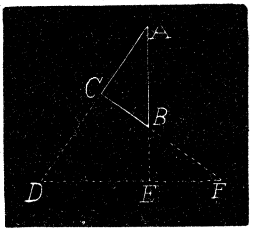

Fig. 6.

ARITHMETIC.

Conducted by B. F. FINKEL, Springfield, Mo. All contributions to this department should be sent to him.

SOLUTIONS OF PROBLEMS.

56. Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pennsylvania.

A, B, and C can walk at the rate of a=3, b=4, and c=5 miles, per hour. They start from Washington, at m=1, n=2, and p=3 o'clock, P. M., respectively. When B overtakes A, he is ordered (by A) back to C. When will B and C meet? Suppose B had ordered A back to C, when would A and C meet? In case all three continue walking ahead, at what time will they meet?

Solution by P. S. BERG, Larimore, North Dakota.

Since B gains 1 mile in 1 hour on A, to gain 3 miles will require 3 hours, or it will be 5 o'clock and 12 miles from starting point when B and A meet. C has traveled 10 miles. Since B and C travel 9 miles in 1 hour, they will travel 2 miles in $\frac{2}{9}$ hour, hence they will meet at $5\frac{2}{9}$ o'clock. Since A and C travel 8 miles in 1 hour, they will travel 2 miles in $\frac{1}{4}$ hour, hence they will meet at $5\frac{1}{4}$ o'clock.

In case all three continue walking ahead, as stated above A and B will meet at 5 o'clock. Since C gains 2 miles on A in 1 hour, to gain 6 miles will require 3 hours. Hence they will meet at 6 o'clock. Since C gains 1 mile on B in 1 hour, to gain 4 miles will require 4 hours. Hence it will be 7 o'clock when they meet.

Also solved by *B. F. YANNEY* and *H. C. WILKS*.

57. Proposed by L. B. FRAKER, Weston, Ohio.

Suppose that in a meadow the grass is of uniform quality and growth and that 6 oxen or 10 colts could eat up 3 acres of the pasture in $\frac{15}{25}$ of the time in which 10 oxen and 6 colts could eat up 8 acres; or that 600 sheep would require $2\frac{2}{7}$ weeks longer than 660 sheep to eat up 9 acres.